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U.S. Department of Agriculture
Office of the Secretary

For Immediate Release

I am delighted to have been asked to play a role in this landmark conference.

It is appropriate that the three organizations most deeply involved in aquaculture are meeting together, and that those of us who represent the federal government's interest are meeting with you.

You picked the right city. In the Carter Administration, invitations from Atlanta are not treated lightly.

But the real reason I am so glad to be here -- and I think I can say the same for my Washington colleagues -- is that you picked the right time to discuss with us the federal government's role in the field of aquaculture.

The new Farm Bill signed by President Carter last fall explicitly includes aquaculture among the responsibilities of the U.S. Department of Agriculture.

Congress is considering legislation that would broaden the government's role.

The government agencies with a stake in aquaculture are actively working together. We are anxious to define roles, assign responsibilities, and work as a team.

Remarks by Dr. M. Rupert Cutler, Assistant Secretary of Agriculture for Conservation, Research and Education, before Aquaculture/Atlanta '78, Atlanta, Georgia, January 5, 1978.

All this is new -- and in a moment I will talk about some of our goals. But of equal importance is what we are doing already. As most of you know, the USDA is not a new actor in the field of aquaculture. Several of our agencies have provided technical and financial assistance for a number of years. These services are available, and we urge you to use them.

First, the Soil Conservation Service. With field offices in nearly all counties in the United States, the SCS is able to work directly with land owners and operators whose desires and farm resources indicate an opportunity for some kind of aquaculture.

The Soil Conservation Service helps aquaculturists assess their potential for growing and marketing a product and helps them match their resources with the right kind of enterprise. Most of this assistance is with freshwater fish farming.

Specifically, the SCS helps aquaculturists with field testing of water quality and quantity, with soil information, with information about the potential market, and with assessments of human and financial resources.

This is not a sideline. In fiscal year 1976, the SCS provided technical assistance with fish management on 45,000 ponds, 2,400 acres of commercial fish ponds, and 13,000 feet of fish raceways. Reduced to the kind of statistics we use in Washington, this effort totaled about 30 man-years and about \$660,000.

Cooperative Extension is the educational arm of the Department of Agriculture and part of our new Science and Education Administration. Its responsibility is defined by one of the clearest and most beneficial provisions in federal law. The job of Extension is, and I quote, "to aid in the diffusing

among the people of the United States useful and practical information on subjects relating to agriculture and home economics, and to encourage the application of same." Unquote.

Using research information provided by the state agricultural experiment stations and other research agencies, Cooperative Extension -- based at the Land Grant Universities, serving every U.S. county -- has been actively engaged in fish pond management in 26 states. Many state extension services have begun programs on marine resource education, commercial fishing, and other coastal zone oriented subjects, in part because of funding from the Sea Grant Program of the Department of Commerce. Activities have been expanded in marine areas since Extension negotiated an understanding with the Sea Grant Program. In 20 states now, Cooperative Extension Services are carrying out marine advisory service educational programs under this mutual agreement.

Recently, Extension personnel have begun conducting education programs on economics and management in aquatic animal harvesting, processing, storage, and marketing. An estimated 103 man-years was invested in this program in fiscal 1976.

The Cooperative Research activity of USDA's Science and Education Administration supports financial research on freshwater aquaculture at the State Agricultural Experiment Stations of the Land-Grant Universities. This currently involves 48 research projects totaling about 20 scientist-years. The combined total effort on all aquaculture-related projects at these state institutions last year was about 57 scientist-years.

USDA's Farmers Home Administration channels credit to farmers, rural residents, and rural communities. It helps borrowers gain maximum benefit from loans through counseling and technical assistance. Farmers and rural people have several credit programs they can call upon through Farmers Home to help purchase or operate farms, provide new employment and business opportunities, enhance environment, acquire homes, and upgrade the standard of living for all who wish to live in small towns or open country. Agency personnel are active on state and county committees involved with the improvement or development of local areas. They have learned the need for local ideas and initiative, and for leadership from private individuals and local officials as well as university scientists. An estimated 7.5 million dollars was loaned to assist aquaculture and aquaculture-related activities by FmHA during the past fiscal year.

So we have several aquaculture-related programs already in place at USDA. It is a good foundation to build on. And aquaculture is an industry with vast potential for growth.

Aquaculture is an enigma. In one way it is an industry tied to ancient practices; in another, it is one of the most exciting and progressive of agricultural sciences.

The technology of food production from aquatic sources probably antedates any other food technology still used. The hooks, traps, and nets used by today's fishermen vary surprisingly little from those used in ancient times, and a substantial fraction of the world's fish is still taken by these methods.

Three revolutions have occurred in fishing. The first was the large-scale conversion to powered vessels early in this century. The second was the development of improved navigation and fish-finding methods after World War II, and the development of the power block for net handling. The third was the development of factory fleets, mostly by the U.S.S.R. and Japan, capable of overfishing a stock of fish in a year or two, in contrast to the decades required previously.

Aquaculture could be the fourth revolution. It has a high potential for increasing world production of fishery products through the development of new systems, using additional species, improved management techniques, and the development of sound ecological approaches to fish culture. There are many large unutilized and underutilized areas in many parts of the world that are suitable for aquaculture. Major constraints to large-scale development of aquaculture in the United States are biological, economic, and technological, compounded in some cases by institutional problems. While biological knowledge for some species is available, the technology needed for commercial production is frequently lacking.

In assessing the future of any enterprise, new or old, we must look today at its efficiency as a user and producer of energy. Fish is eighth of nine food groups in the ratio of energy content to energy used for production. In the ratio of energy use to protein content, however, fish leads the nine groups, and is more efficient than meat and poultry by perhaps one-third. Coastal fishing is reasonably efficient, at about the same energy-use level as milk from grass-fed cows. Distant-water fishing, on the other hand, is one of the most inefficient means of food production and can be compared to feedlot beef production.

As man cultivates marine foods more intensively in aquaculture, the energy cost of production rises. That means that you are in the same boat with other kinds of agriculture -- intensive production burns energy. Weighing all these factors, aquaculture is an energy bargain as a producer of protein, and is not out of line by any measurement of energy efficiency.

As we begin to talk about the future of aquaculture, it is proper to start with consideration of the needs of the American consumer. Bob Bergland, the Secretary of Agriculture, is determined to draw up a new food policy for the United States designed to correspond to human nutritional requirements. As part of this, consumers must be taught by Cooperative Extension and others the nutritional benefits of fish-steaks and other products of aquaculture. Your products are superb and efficient producers of protein. That is a story we expect you to tell. You can expect help from USDA's educational program staffs.

In the United States, private commercial marine aquaculture accounts for some 9,100 metric tons of oysters, not counting the shells, and about 450 metric tons of pen-reared salmon. Freshwater aquaculture, primarily catfish and trout, is practiced on about 65,000 acres with a total production of about 39,000 tons. Experimental efforts are in progress on shrimp, freshwater prawns, Pacific salmon, lobsters, marine plants, crayfish, clams, oysters, scallops, and various freshwater species, such as tilapia, which I recently saw thriving in SCS-designed ponds managed by the Department of Marine Sciences of the University of Puerto Rico.

The situation in aquatic foods differs from that in nearly all other food sources in that some 90 percent of the supply of aquatic foods comes from wild stocks. About the only effective control that now can be exercised by man is to manipulate rates of harvesting so that the wild stocks will continue to yield at the highest rates possible consistent with their preservation and conservation.

But that does not preclude research. It invites it.

As I've indicated, the USDA recently reorganized its research, extension, and library units into a new agency called the Science and Education Administration. This will allow us to be more responsive to changing societal needs, to do a better job of coordinated planning and budgeting, and may permit us to hire a full-time project manager to keep an eye on all phases of USDA work in aquaculture.

In aquaculture, most of our research has focused on areas of high potential, such as catfish farming. We intend to initiate and support new research projects, but we will continue to be pragmatic.

Exotic species need to be researched and developed, too. But we have a great deal of research that can be put to work immediately. For example, marketing problems represent one of the major roadblocks to success in some locations. Here -- as I mentioned a moment ago in another context -- you can benefit from the fruits of nutrition research that already have been conducted.

I cannot present to you today a new aquaculture policy of the federal government. But I can tell you what we are doing toward that end.

We have established a USDA Aquaculture Work Group. This group is looking at present programs and developing a general plan of goals and directions.

I can assure you that the federal agencies involved are working together. The Washingtonians who will be relieving me on this podium shortly are not strangers. We, and others in our agencies, are working as a team so that our thrust in aquaculture will be unified and cohesive, not overlapping or contradictory.

Our work group has developed a draft strategy that recognizes the following major areas as needing immediate attention.

(1) Increased inventory and analysis capability.

(2) Technology development. Biological, economic and marketing technologies need immediate attention. This will require not only an appraisal of the state of the art, but additional research.

(3) Increased financing and financial assistance. The administration's new Farm Bill recognizes this need in Section 1503, which provides expanded loan authority for the Farmers Home Administration.

(4) Increased education and technical assistance in the form of formal training, advisory services and technical on-site assistance.

All of this must be underpinned with close institutional and interagency cooperation.

One unknown in this mix is the old question, "How much federal funding there will be?" That will depend partly on legislation pending before Congress. One bill has been reported out of committee in the House, where Congressman Leggett and Congressman Breaux have been its champions. Senator Stone and others have introduced another version in the Senate. This new legislation would strengthen the commitment of the administration to be more aggressive in the area of aquaculture development.

In summary, it is apparent that there must be action on many fronts, and that we must be partners -- within government, with universities, and with private industry. Research, financing, technical assistance, education and cooperation are all important ingredients. I believe that Aquaculture '78 will be remembered as the "alpha" in the aquaculture industry -- the beginning of a period of progress unmatched in the history of the industry. I share your belief in a bright future for aquaculture.

Thank you.

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